
Family Tree: Motivator for Elderly Adoption of Social Networks

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Abstract

This paper presents a way of motivating Social Network adoption by elderly users, by basing interaction and design of an existing service around family awareness. Following an approach based on a tablet device interaction and navigation through a family (genealogical) tree like interface, we provide relevant discussion which is related with the use of family as a central role in Social Network applications when concerning elderly, and we present the initial prototype developed making use of Facebook API. Later on this paper, we will also refer to our studies regarding the usability of the prototype, reported by users.

Author Keywords

social networks; older adults; family; tablets; user-centered design.

ACM Classification Keywords

H.5.m. [Information Interfaces and presentation (e.g., HCI)]: Miscellaneous.

General Terms

Design, Human Factors.

Introduction

The growth of the Internet and the advent of social media services created new and better opportunities for

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social integration of the population. Social Networking Platforms (SNPs) aim, not only at strengthening existing and close relationships for highly sociable people, but also at rediscovering weak ties and developing hobby-oriented ties, especially for those who feel isolated and are not involved in a real-life dense network [6]. If for the former, SNP can bring a lot of exchanges, for the latter, these tools have the capability of creating opportunities to both renew links with 'old' relationships and create 'new' ones around common interests. We believe that most information and content travelling around social networks are of interest to the elderly, especially those related with close family (e.g., family photos).

Recent studies show that the usage of platforms like Facebook helps enhance elderly's quality of life, autonomy or social life [4] mainly because it allows frequent, light and collective discussions with close family [2,8], increasing well-being and higher life satisfaction [7,1], and reducing isolation [6]. For these reasons, the adoption of social networks by elderly has raised considerably in the recent years [5,3]. However many elderly still can't make use of social networks because these networks are simply not designed for them [1]. Therefore, barriers must be broken by designing solutions which consider specific conditions of older adults from the start, and make possible for elderly to take advantage of new technologies and services that can help improve their quality of life. Giving family a central role in the use of the SNPs, and focusing the application design around family awareness can be the solution [2].

Previous research has looked at different ways to include family awareness for different purposes. For

instance, Mynatt et al. [9] introduced a new concept of design, based on the family portrait. Similarly to a traditional portrait, their idea was to provide a digital frame, updated periodically, capturing activities and observations that would naturally occur to family members [9]. At the time this research was conducted, SNPs were not available. However, the information current SNPs display can be likened to the one presented in the digital family portraits. By exploring kinship relations, available in today's SNPs, a relation tree can be estimated, having the aforementioned core assets in mind. Further, this family tree will provide important semantic information regarding people involved and has also numerous applications in social networking. Zhang et al. conducted a study for deriving the person's relationships throughout their relative's network and consequently deriving the overall family tree [10]. Our work is focused on the same concept, but applied to a different scope. We believe that the actual structure of SNPs has enough leeway for the creation of a user-friendly, easy, and well-structured application. Moreover, this application would provide ways of linking elderly users to their closest relatives, which is of great importance to this segment of the population [2,8]. Departing from kinship relationships available in SNPs it is possible to gain sufficient insight on the user's relationship tree [11] and explore the family tree concept as a motivational cue to draw older adults to social platforms and reap their benefits.

The Family Tree Prototype

The most relevant feature of the prototype allows the user to have a singular view and navigation of his or her family, pursuing a "family tree" concept. Kinship relations are obtained by querying a user's Facebook profile. Information is structured according to Figure 1,

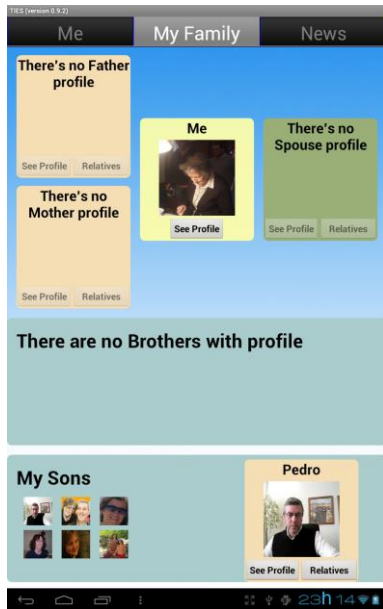


Figure 1. "My family" feature with family tree navigation functionality.



Figure 2. "My family" view with a tree centered on a profile different from the logged user.

where the focused user has relatives spread around her. Each relative is represented by his name, degree of kin and profile picture in order to improve the perception and recognition of relatives' profiles, by the older adults. The position of a relative profile itself is dependent on her relationship regarding the focused user. As we can see in Figure 1, father and mother profiles are always grouped to the left of the focused user, whereas the spouse profile is always placed to the right. Moreover, as brother/sister and son/daughter relationships can be quite extensive, our design decision was to implement two dynamic lists that would be used as containers for those kin. We try to achieve a better and simplified interaction by allowing the logged user to click any of her relatives' profiles, and see relevant profile information, or simply visualize their relatives. The latter operation refreshes the view, by placing the selected relative profile at the center of the structure. Hence, the logged user can see the relative's relatives and their relationships regarding not only the (now) focused user, but also the (original) logged one. The kinship to the focused user is perceived by the relative placement of profiles. The kinship to the logged user is made explicit in the text accompanying each entry in the family tree (Figure 2). The goal with this style of navigation is to increase the ease of exploring family members in a social network, thus promoting the closeness of the older adults to their family, and acting as a motivational factor for adoption of social networks to this population segment. This is something that is not currently implemented in SNPs like Facebook, and which we believe to be one of the main causes for the lack of adoption of these kinds of services among elderly population.

The prototype also included operations that allows users to visualize their profile, by presenting basic information like profile image, name, location, birthplace and birth date, work and studies history. Users could also post and visualize their newsfeed. Including these operations ensured users already familiar with Facebook would not be alienated by the lack of the most basic features of the platform, although they are not the focus of this study.

The prototype was deployed on a tablet platform. We opted for this platform, instead of a desktop platform, since it has been shown that older adults are very receptive to tablets [12, 13].

Preliminary Evaluation

We have conducted an initial assessment of the user-interaction with social networks through the use of the family tree. More concretely, tests were made with two older adults: an unskilled, inexperienced, elderly user, and an older adult user, who was perfectly familiar with the social network environment. Results have shown that despite the fact that experience is decisive to the ease of interaction with social networks, we have several hints that family is the main motivator for elderly use of Facebook. This is supported by a number of positive reactions observed when: seeing the family tree for the first time; seeing information related with a relative workplace or photos; or even when sharing new updates related with family. Note that these reactions were more pronounced for the inexperienced participant, which has shown herself to be very pleased to see her tree.

Conclusions and Future Work

Our initial study, together with other studies made previously in this area, are indicators that family should be a major concern when designing user interfaces for elderly social networks. Thus, the use of family trees is one possible way of facilitating the adoption of these platforms, which are still not regularly used by the elderly population. Nonetheless, additional research and studies are needed in order to validate the solutions presented. More specifically, extensive surveys with elderly population, and technical trials to test different alternatives for family tree interfaces, like basing the implementation on a pan functionality for supporting a more scalable (zoom in and zoom out) and boundless interaction (moving up, down or sideways on family relationships).

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References

- [1] Sundar, S. S., & Hirsch, A. O. (2011). Retirees on Facebook : Can Online Social Networking Enhance Their Health and Wellness ? *Methods*, 2287-2292. ACM Press.
- [2] Bothorel, C., Lohr, C., Thépaut, A., Bonnaud, F., Cabasse, G.: From Individual Communication to Social Networks: Evolution of a Technical Platform for the Elderly. *International Conference On Smart homes and health Telematics, Montréal : Canada* (2011)
- [3] Madden, M. Older adults and social media. *Pew Internet and American Life Project* (2010).
- [4] Rivière, C.A, Brugière, A.: Bien vieillir grâce au numérique. *Fing* (2010)
- [5] Jacob Nielsen, Global faces and networked places: A Nielsen report on social networking new global footprint. *Technical report, March 2009.*
- [6] K. Brunette, M. Eisenstadt, E. Pukinskis, and W. Ryan. Meeteetse: social well-being through place attachment. In *CHI '05: extended abstracts on Human factors in computing systems*, pages 2065–2069, New York, NY, USA, 2005. ACM
- [7] Lee, G., Lee, J., Kwon, S. Use of social networking sites and subjective wellbeing: A study in South Korea. *Cyberpsychology, Behavior, and Social Networking, Online ahead of print* (2010)
- [8] P. C. Santana, M. D. Rodríguez, V. M. González, L. A. Castro, and A. G. Andrade. Supporting emotional ties among mexican elders and their families living abroad. In *CHI '05: extended abstracts on Human factors in computing systems*, pages 2099–2103, New York, NY, USA, 2005
- [9] Mynatt, E. D., Rowan, J., Craighill, S., & Jacobs, A. (2001). Digital family portraits: supporting peace of mind for extended family members. *Proceedings of the SIGCHI conference on Human factors in computing systems - CHI '01* (pp. 333–340)
- [10] Zhang, T., Chao, H., Willis, C., & Tretter, D. (2010). Consumer image retrieval by estimating relation tree from family photo collections. *Proceedings of the ACM International Conference on Image and Video Retrieval - CIVR '10* (p. 143).
- [11] Kirman, B., Björk, S., Deterding, S., Paavilainen, J., & Rao, V. (2011). Social game studies at CHI 2011. *Proceeding CHI EA '11 CHI '11 Extended Abstracts on Human Factors in Computing Systems* (pp. 17–20).
- [12] Li, G., Zhao, Y., Jiao, B., Korhonen, T.: Design of Easy Access Internet Browsing System for Elderly People Based on Android. *On Grid and Pervasive Computing Workshops, Lecture Notes in Computer Science*. 2012
- [13] Werner, F., Werner, K., and Oberzaucher, J. (2012): Tablets for Seniors – An Evaluation of a Current Model (iPad). *On Ambient Assisted Living, Advanced Technologies and Societal Change, Springer Berlin Heidelberg*
- [14] Keith Hampton, Lauren Sessions Goulet, Lee Rainie, Kristen Purcell (2011) Social networking sites and our lives, retrieved from <http://www.pewinternet.org/Reports/2011/Technology-and-social-networks/Part-3/SNS-users.aspx>